

Rapid Spacecraft Development Office News

June 1999

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A message from the RSDO Chief, Jim Adams:

About the newsletter...

Well, it's time again for another installment of the RSDO newsletter. I know it seems like the last one just came out, but Lena Braatz, our faithful and very patient editor, assures me it's time again. It has been a busy few months. It seems that the agency is once again in need of a satellite that can be built in under a year. The TOMS mission, once it gains final approval, will launch as a secondary aboard a Taurus in August 2000. Most of you have likely already seen the draft request for offer. TOMS represents another RSDO first—the SOMO/CSOC office has requested an opportunity to be fairly considered in the competition. Therefore, the RFO will be structured to allow the TOMS customer to make an informed decision between vendor- and NASA-provided operations services. How well this works out not only means a lot to the TOMS customer, but will set precedence for future orders when vendor-provided operations services are being considered.

QuikSCAT is ready for launch on June 18th. The first RSDO procurement to be placed into orbit was ready for launch in 11½ months. Even though the launch has been delayed 7 months due to the Titan IV launch failures, this accomplishment is a significant achievement for the entire QuikSCAT team. Congratulations to Jim Graf/JPL, Ken Schwer/GSFC, and Ball Aerospace, as well as everyone who has made QuikSCAT a record breaker!

In addition to an article on the TOMS mission in this issue, there is a summary by Ron Miller about the status of the Rapid II acquisition, including several key decisions that were recently made regarding the approach and schedule for Rapid II implementation. Also in this issue, Scott Greatorex and Don Margolies report on the discussions held at the April 1999 GSFC Explorers Program Conference.

About our personnel...

I normally write a few paragraphs in these newsletters explaining some of the personnel changes that have taken place over the previous few months. This time what I have to say is of a very personal nature. Recently, I have been challenged to take a special assignment to lead the GSFC capture team for the New Millennium Program's Earth Orbiting 3 mission. A GSFC measurement concept was one of four selected to proceed through initial study. The competition is stiff, and all the concepts excellent, but the GSFC measurement concept and mission is strategically significant to Goddard for a variety of reasons. I have accepted this challenge and effective immediately I am on "detail" to the System and Advanced Concepts Directorate. The detail will be at least 120 days, so GSFC management has appointed Scott Greatorex to the post of Acting Chief of RSDO while they look for my replacement. Replacement? Though, my assignment is just a detail, it is unlikely that I will return to RSDO when it is completed. The business of supplying the agency with rapid satellite acquisition services must continue to move forward and can't simply tread water while I'm gone. I agree that both efforts are too important to GSFC to allow them each to "share a chief." So I plan to move on.

This is a bittersweet moment. Bitter in the sense that I leave behind a fantastic team of civil servants and contractors that have been able to think so far "out of the box" that NASA Headquarters, NASA Field Centers and even other agencies routinely express amazement. There is an incredible camaraderie among us all. The experience is sweet in that the challenge laid before me represents an even bigger mountain to climb, with a whole new set of problems. I will miss the frenetic pace at RSDO, and the opportunity the office has afforded me to be involved in so many exciting mission concepts. But above all, I will miss the people. The longer I live, the more I realize that no matter what you do, the experience of life is meaningless without relationships. Thank you to you all for the wonderful experience that we had!

Jim Adams

Rapid II RFO Is in the Works

Preparations for the Rapid II program are continuing on schedule. At the Rapid II Acquisition Strategy Meeting, held on May 25, 1999, we confirmed the approach to Rapid II implementation. Several key decisions concerning Rapid II were made and are listed below, along with a tentative Rapid II schedule.

Tentative Schedule:

- Release Draft RFO - June 30, 1999
- Contractors Comments Due - July 23, 1999
- Pre-Solicitation Conference - week of August 2
- RFO Release - August 20, 1999
- Proposals Due - October 4, 1999
- Selections Announced - December 1999
- Contract Start - January 3, 2000

Key Decisions:

- Rapid II will be procured under FAR Part 12, using NASA's MidRange Evaluation Procedures (NSF Part 1871).
- On-Ramps will be included. An on-ramp is a contractual mechanism that allows additional satellites and satellite contractors to be added to the set of IDIQ contracts. On-Ramp proposals will be accepted approximately twice a year, as scheduled and announced by the Contracting Officer. On-Ramp proposals will be evaluated using the same standards as the initial proposals.
- Minimum acceptable Bus Level of Maturity will be "Successfully Completed Mate and Interface Testing With a Launch Vehicle."
- Options will be limited to increases or decreases in specific subsystem performance parameters. "Bundling" of upgrades will be strongly discouraged. Options for services such as operations, testing, etc., will be accepted.
- The Scope of Work for Rapid II will include the capability for contractors to provide Delivery In Orbit, Operations, and miscellaneous "off the shelf" space hardware below the spacecraft level.
- The Rapid II SOW will allow contractors on the IDIQ contract to perform mission studies on spacecraft not currently in the catalog.

Comments regarding the approach and plans for Rapid II will be accepted until the release of the final RFO, scheduled for August. We are also available to discuss Rapid II with vendors as time permits. Please contact Ron Miller (Ronald.A.Miller.1@gsfc.nasa.gov) for more information about the upcoming Rapid II RFO.

By Ron Miller/ RSDO Mission Integration Manager

RSDO Chosen as "Showcase Program" for the George M. Low Award Ceremony

On April 22, 1999, at a ceremony at the Hilton Plaza in Alexandria, Virginia, NASA representatives presented the George M. Low Quality and Excellence Award. This award is bestowed each year by NASA to a deserving contractor organization. Following the conferral of the Low award, representatives from NASA programs nominated for NASA's Continuous Improvement Team (CIT) award were granted the opportunity to give short informational presentations. The RSDO, chosen as one of these NASA "showcase programs," was represented by RSDO Chief, Jim Adams.

Nominations for the annual CIT Award are submitted by NASA's fourteen Quality Management Advocates, each of whom represents one of the ten NASA centers or four NASA Enterprises. Quality Management Advocates may nominate one program from their organization for the CIT award each year. The Quality Management Advocates then work together to select five outstanding teams to be eligible for the CIT award from the nominated programs. Representatives from these five "showcase programs" give brief presentations about their organizations at the George M. Low Award ceremony, where the winner of the CIT award is determined. The panel of judges this year included NASA administrator, Daniel Goldin; Associate Administrator of the Office of Space Flight, Joseph Rothenberg; and the Associate Administrator for Space Science, Edward Weiler.

In addition to Daniel Goldin and the other judges, audience members at the ceremony included all the NASA center directors, the NASA Enterprise Heads, and over 250 NASA contractor representatives.

In his presentation, Jim Adams explained the role of the RSDO, linking its mission with the goals of both NASA and Goddard Space Flight Center. He explained the problems that exist with the traditional spacecraft acquisition process, and how the RSDO successfully implemented programs to overcome many of those difficulties. Jim noted the achievements the RSDO has attained thus far, citing the successful missions that took advantage of RSDO programs, the RSDO report card results (see March 1999 RSDO newsletter), and statistics demonstrating how RSDO has made the satellite acquisition process "faster, better, and cheaper." Finally, he explained that throughout the process of implementing these programs, RSDO personnel gained valuable knowledge that will benefit them as they continue their mission.

In a letter to GSFC Director, Al Diaz, NASA's Associate Administrator for Earth Science, Dr. Ghassem Asrar, commended Jim Adams for his selection as a presenter for the Continuous Improvement Team Award. Dr. Asrar emphasized the importance of RSDO's accomplishments to the Earth Science Enterprise, and remarked upon the RSDO team's "ability to accept a challenge and achieve a goal worthy of recognition."

In addition to the honor associated with being nominated for the CIT award, participation in the George M. Low Awards ceremony was a fantastic opportunity to highlight the recent RSDO achievements to NASA's most senior managers. Furthermore, the presentation enabled many members of the commercial space industry to be exposed to the RSDO, its mission, and accomplishments.

By Lena Braatz/Booz, Allen & Hamilton, Inc.

Note: A copy of the RSDO presentation given at the ceremony and a copy of Dr. Ghassem Asrar's letter to the GSFC Director are available at the end of this issue.

NASA Explorers Program Office Convenes Workshop

The NASA Explorers Program (EXP) held a workshop on April 29, 1999 to discuss the changes which have occurred in the competitive approach since the last EXP Announcement of Opportunity (AO) was issued. At the workshop the EXP solicited feedback from participants on new approaches and potential changes for the future announcements. It was very apparent that the EXP plans to continue to modify its AO processes and eliminate unnecessary steps to accommodate the proposing Investigators and streamline the program.

An example of this redirection is the alteration of the proposal component requiring that proposing Investigators not only provide detailed mission implementation approaches, but provide detailed costs as well. Authoring this portion of the proposal required knowledge of mission elements such as ground systems, network interfaces, operations activity, and level 0 or 1 science data processing. Consequently, those science teams writing the proposals, but lacking direct experience with certain components required in the mission implementation approach, began seeking industry support. Hence, a teaming arrangement craze raged throughout the spacecraft community, as science teams sought industry partners for the formulation of spacecraft configurations, mission concepts, and detailed cost numbers.

After the first evaluation concluded, the EXP received feedback indicating that the detailed mission implementation approach element was both needless at this early stage of the selection, and extremely demanding on industry, who lacked the resources to support every science team that approached them. As a result the EXP has modified its approach and is initiating a two stage process in order to make it easier and less expensive for Investigators to submit proposals.

In the first stage, proposals will be evaluated primarily on their science, technical content, and feasibility. Therefore, these proposals will contain only top level mission implementation descriptions and cost numbers. Since the generation of a detailed cost proposal presents a major cost to proposal writers, elimination of this component will save considerable time and effort up front. If a proposal is selected to advance to stage two of the process, the Investigator would be funded to do a six month Phase A study. The study report will contain complete and detailed mission implementation information and a detailed cost proposal. The Small Explorer (SMEX) AO to be issued under this amended process will be released later this year.

Another alteration, raised by academic and industry participants and discussed at the workshop, was the concept of bridging the science/funding gap that exists between the University Explorer (UNEX) missions, which are projected to be capped at \$7M, and the SMEX missions, which are anticipated to be capped at \$75M. It was recognized, however, that implementation of this concept would impact the overall Explorers program and one or more of the subsequent AOs. For instance, since the EXP's funding in NASA's budget has already been established, implementation of this gap-filling concept could delay the next round of Medium Explorer (MIDEX) announcement/selections by approximately 6 months. The MIDEX delay could free approximately \$60M to \$75M, which then could be allocated to the new program, creating up to three missions capped at \$25M each. The workshop participants received this suggestion, with little opposition, and the EXP may consider the suggestion. Other changes in the AO competitive process can be expected as feedback is received, ideas are attempted, and new concepts are engineered.

Visit <http://explorers.gsfc.nasa.gov/expwork-apo.html> to view the 1999 Explorers Conference attendance list and presentation materials.

By Scott Greatorex/RSDO Mission Integration Manager and Don Margolies/NASA Explorers Program

NPOESS Preparatory Project Bridge Mission

The National Polar-orbiting Operational Environmental Satellite System (NPOESS) Preparatory Project (NPP) is a proposed joint mission between the NPOESS Integrated Program Office (IPO) and NASA. This proposed mission is currently being formulated. Pending anticipated approval, NPP is intended as bridge between the Earth Observing System (EOS) Terra and PM-1 missions, and the NPOESS mission. The proposed instrument set for NPP consists of the Visible Infrared Imaging Radiometer Suite (VIIRS), the Cross-track Infrared Sounder (CrIS), and the Advanced Technology Microwave Sounder (ATMS). An optional instrument of opportunity is also under consideration.

A Request for Information (RFI) for the NPP spacecraft was issued in February 1999, and responses were received in March 1999. Respondents presented their responses to representatives of the NASA Goddard Space Flight Center (GSFC) and NPOESS IPO in April 1999. The responses and presentations are being reviewed and summarized for the purpose of assisting in the determination of the viability of various spacecraft acquisition approaches. All of the responses provided valuable information regarding the spacecraft and other aspects of the proposed mission, and the support and contributions by industry in this work are greatly appreciated.

The next steps for NPP include continuing the formulation of the mission, developing a systems and operations concept for the mission, and making decisions regarding the acquisition approaches for elements of the mission, including the spacecraft.

By Ray Taylor/NPP Mission Lead

New Business

Draft TOMS-5 Spacecraft RFO Released

On June 4, the Rapid Spacecraft Development Office (RSDO) released a draft version of the TOMS-5 Spacecraft Request For Offer (RFO) for comment. After a short period of adjustment, a final version of the RFO will be released for bid later in June.

The Goddard Space Flight Center is planning on launching the fifth TOMS mission by the end of Fiscal Year 2000. TOMS is a science-driven mission to provide daily mapping of the global distribution of the Earth's atmospheric ozone. The TOMS-5 instrument (a completed off-the-shelf instrument) takes high-resolution measurements of the total column amount of ozone from space-an effort that began with NASA's Nimbus-7 satellite in 1978. The TOMS-5 instrument measures ozone indirectly by mapping ultraviolet light emitted by the Sun to that scattered from the Earth's atmosphere back to the satellite. In addition to ozone, TOMS also measures sulfur dioxide released from volcanic eruptions. The U.S. Federal Aviation Administration (FAA) is studying ways to use these measurements to detect volcanic ash clouds that are hazardous to commercial aviation.

The draft Spacecraft RFO release period is not considered to be part of the procurement black out segment, and communications with the RSDO and the TOMS-5 personnel are allowed and encouraged during the one-week question and answer period. All questions or comments related to the draft RFO must be received by June 11th for incorporation into the final RFO. A four-day period has been set aside for RSDO personnel to refine the RFO and to generate a final document. The final TOMS-5 Spacecraft RFO is scheduled to be released on June 18th and will be open for a two week period. Proposals for this effort are scheduled to be received on July 2nd. A decision and delivery order is expected by the end of the month.

The tentative schedule for the TOMS-5 RFO solicitation is outlined below:

- Release Draft Spacecraft RFO - 6/04
- Question/comment period - 6/04 to 6/11
- RFO adjustment period - 6/11 to 6/17
- Release Final Spacecraft RFO - 6/18
- Black-out period - 6/18 to 7/21
- Proposals Due - 7/02
- Selection - 7/16
- Delivery Order Award - 7/21

For questions concerning the technical aspect of the TOMS-5 instrument or mission please contact Ken Schwer (301-286-3225; kschwer@pop400.gsfc.nasa.gov) or Gary Cunningham (301-286-9826; gcunning@pop400.gsfc.nasa.gov).

For information about the RFO or the TOMS-5 RSA process please contact Scott Greator (301-286-6354; sgreator@pop500.gsfc.nasa.gov) or Sharon Collignon (301-286-9874; sharon.m.collignon@gsfc.nasa.gov) at the RSDO.

By Scott Greator/RSDO Mission Integration Manager

A Reminder...

The RSDO strongly suggests you consider choosing a small or disadvantaged business when selecting your subcontractors. There are many businesses in this category who, when added to your team, could potentially increase the value of your offerings.

Edited By: Lena Braatz, Booz•Allen & Hamilton

Design & Layout: Sherri Tearman, Booz•Allen & Hamilton

Please send Questions and Comments about this newsletter to braatz_lena@bah.com



Faster, Better, Cheaper Satellite Acquisition

April 22, 1999

W. James Adams

Rapid Spacecraft Development Office

NASA Goddard Space Flight Center



NASA GSFC Vision

- Think Like The Commercial Industry
- Customer Focus
- Buy What Industry Has to Offer
- Provide What Industry Can't
- Focus on Seeding Strategic Technology



Strategic Challenges



- Coordinated NASA & GSFC Strategic Plans
- Goddard 2005 Jump Start Goals
 - Increase Flight Rate by 5x
 - Acquisition Cycles 30-90 Days
 - Delivery Cycles 18-36 Months
 - 50% of All Non-Instrument Cost to be Commercial Products



The Problem



- Spacecraft Acquisition Took Too Long
- Prices Seemed Too High
- Government Scientists at a Disadvantage
- As Many as 17 Spacecraft Acquisitions Required
- Reduced Civil Servant Workforce



The Challenge



- Find A Way to Buy Satellites in:
 - 30 Days with 18 Month Deliveries
 - 90 Days with 36 Month Deliveries
- Continue to Increase Performance/Price Ratio
- Capitalize on Investments Already Made
- Enable Government Scientists
- Make Spacecraft Acquisition Services Available
 - All Interested NASA Centers
 - Anyone Working on a NASA Initiative (e.g. Universities)
 - Any Interested US Government Agency



The Solution



- Multiple ID/IQ Contracts
- Buy Existing Products with Ability to Modify
- Fixed Price, Performance Based Contracts
- Benchmarks (Other US Government ID/IQ's)
 - GSA Virtual Data Center
 - GSFC Scientific and Engineering Workstation Program
- Downstream “mini-competitions” for Orders
- Customer Leads Evaluation
- Transfer Management to the Customer

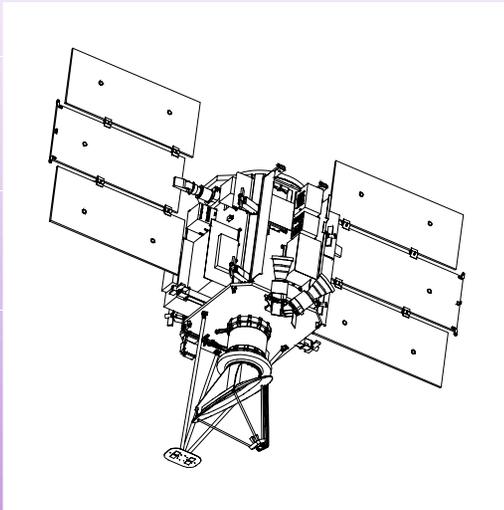


RSDO Program Themes



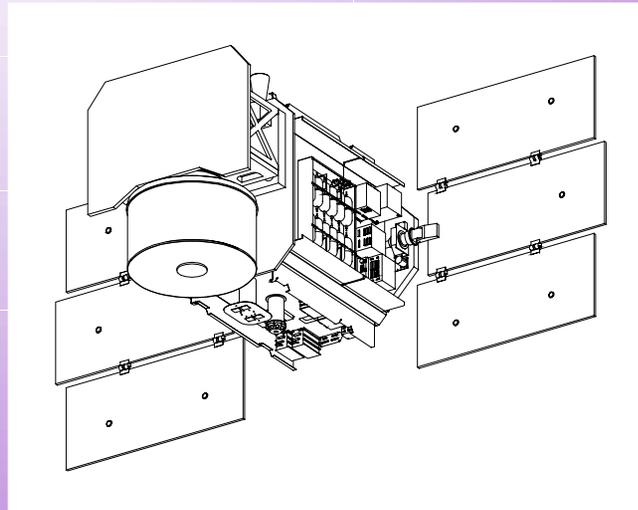
- Enable THE CUSTOMER!
- Contract for What Industry has to Offer
- Fixed Price Orders With Necessary Insight
- Performance Based Milestone Completion Payments
- Allow Modifications to Basic Offerings
- Fair Opportunity to be Considered for Selection
- No Protests Allowed by FAR 16.505 (a)(7)
- Continuous Lessons Learned

QuikScat



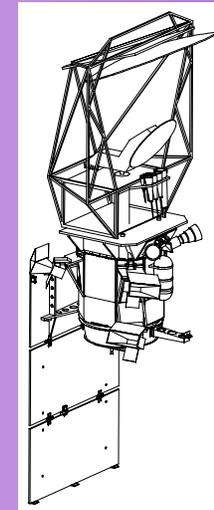
- Acquisition took 3 Weeks
- \$39M Includes 2 Years Operations
- 12 Months to Launch ARO
- Mission not Possible without RSA

ICESat



- Acquisition took 90 Days
- \$39M is 35% Less than Previously Estimated
- Launch in July 2001
- Saved \$20M & 1 Year

Coriolis



- Acquisition took 60 Days
- First USAF use of RSDO
- Launch in Dec 2001
- Groundbreaking Inter-Agency Pathfinder



RSDO 1st Year Accomplishments



- Established RSDO Office and Working Processes
- Put in Place Rapid Spacecraft Acquisition (RSA)
- Put in Place Quick Ride Program
 - Secondary Flight Services on Commercial Satellites
- Served 15 Customers
 - 3 Spacecraft Awarded
 - 7 Accommodation Studies
 - 10 Miscellaneous Study Orders
 - Approximately 20 Different “Data-Gatherers”



RSDO 1998 REPORT CARD



	Pluses	Minuses	Rating (0-10 Scale)
Customers	<ul style="list-style-type: none"> ➤ Extremely Pleased with Service ➤ Happy with Products ➤ All Would Use RSDO Again 	<ul style="list-style-type: none"> ➤ None Identified 	<ul style="list-style-type: none"> ➤ 9.2; Rating RSDO Service
Vendors	<ul style="list-style-type: none"> ➤ Pleased with Process, In General 	<ul style="list-style-type: none"> ➤ Concerned About Volume Of Opportunities ➤ Desire to Establish Consistency of Evaluations Between Customers 	<ul style="list-style-type: none"> ➤ 8.1; On A Combined Scale; Rating Communication, Competence, Consistency, Integrity, And Value Of RSDO
Staff	<ul style="list-style-type: none"> ➤ Enjoy Working at RSDO ➤ Have a Sense of Inclusion and Contribution 	<ul style="list-style-type: none"> ➤ Minor Internal Process Suggestions 	<ul style="list-style-type: none"> ➤ 8.4; Rating Overall Team Effectiveness



Performance Measures



- Faster
 - Ave. Satellite Acquisition = 60 Days vs 9-18 Months
- Better
 - Performance Based, Milestone Completion
 - “Almost Off the Shelf” Design
 - Removes Most NRE
 - Retains Flexibility
 - Lowers Risk
 - Lowers Price
 - Dramatically Quicker Build Cycles
- Cheaper
 - EOS/Chem and LAM CANs = \$60M/spacecraft
 - Same Performance Busses Bought at \$36M/spacecraft



RSDO Lessons Learned



- Continuing Competition is Good
 - Vendor innovation
 - Lower Prices
 - Affords Vendor Opportunity to “No-Bid”
- Don’t Create Artificial “Classes”
- Commercial Industry Appears Self Sustaining
 - Rapid Satellites are Available for Most Needs
 - Commercial Practices Can Reap Significant Benefit
- The Government
 - Need Not Compromise Safety, Quality & Reliability
 - Must Be Flexible with Implementation
- Government/Industry Partnership Attitude



The Future



- Rapid II in Place by Jan. '00
 - Use Commercial Acquisition Rules
 - Implement an On-Ramp
 - Expanded Performance Range
 - Low Cost Bantam Compatible Spacecraft
- Quick Rides to GEO!
 - Fly GEO Science on Commercial Missions
 - Healthy Inter-Agency Dialog and Policy Impact
- Assistance
 - RSDO will Help Anyone Who Asks!
 - Workshops, Conferences, Publications
 - Education/Outreach



National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001



ly to Attn of:

YB

MAY 4 1999

TO: Goddard Space Flight Center
ATTN: 100/Director

FROM: Y/Associate Administrator for Earth Science

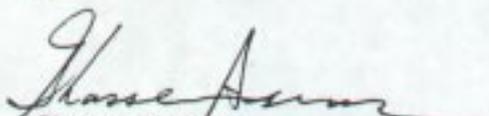
SUBJECT: George M. Low Award

I am pleased to extend my congratulations to you for the selection of the Raytheon Support Services Company, Annapolis Junction, MD, as the winner of the 1999 George M. Low (GML) Award in the Large-Business Service Category. Raytheon was cited for the quality and continuous improvement of their processes and work products, exhibiting superb maintenance of their warehouse and equipment, and their commendable safety program.

Please express my congratulations to the Computer Sciences Corporation, Federal Sector-Civil Group, Lanham, MD, a finalist in the Large-Business Service Category, and well as to the other semi-finalists and nominees whose selection reflects their continued attention to customer satisfaction and commitment to quality.

I would also like to commend Mr. W. James Adams of the GSFC Rapid Spacecraft Development Office for his selection as a Continuous Team presenter at the 14th Annual Continual Improvement and Reinvention Conference. Mr. Adams conducted an excellent presentation of the process he initiated to improve the acquisition of spacecraft. He and his staff addressed a difficult and challenging problem and developed a process that reduced spacecraft acquisition time from nine to eighteen months to 60 days, and reduced the acquisition costs from \$60M to \$36M a spacecraft. His presentation addressed areas very important to the Earth Science Enterprise: capitalizing on investments; benchmarking; customer focus and satisfaction; and performance measurements. These are outstanding achievements which exemplify Mr. Adams' team ability to accept a challenge and achieve a goal worthy of recognition.

Thank you for the time and effort invested by GSFC staff in coordinating the nominations for this year's GML Award for quality and excellence. Please extend my appreciation to Mr. Gene Guerney and Ms. Judy Brunner, for their valuable contributions as participants in the evaluation and validation processes.


Ghassem R. Asrar

cc:
YB/Mr. R. Beck
YB/Ms. A. Anderson
GSFC/Code 100/Ms. J. Brufner
GSFC/Code 200/Mr. G. Guerney
GSFC/Code 401.5/Mr. Adams